

#5

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FIG. 1a

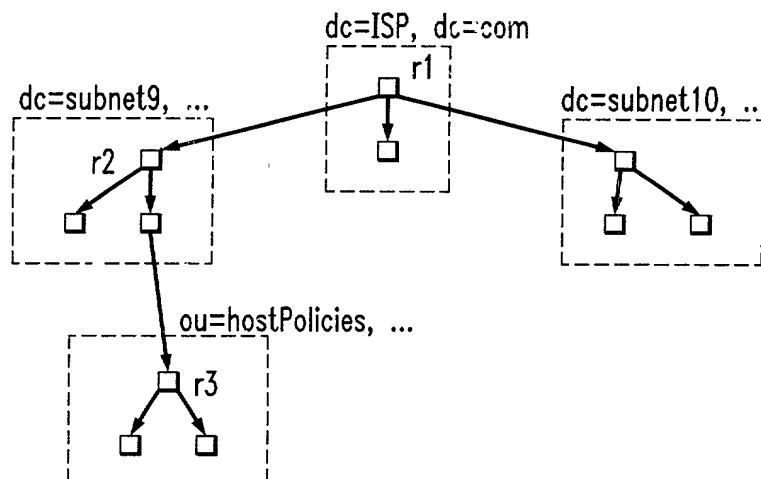
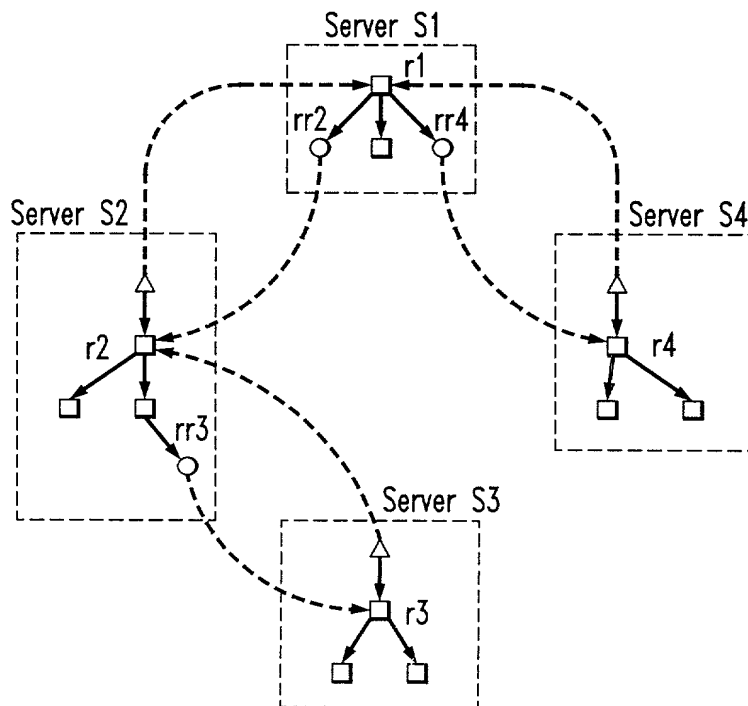


FIG. 1b



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FIG. 2a

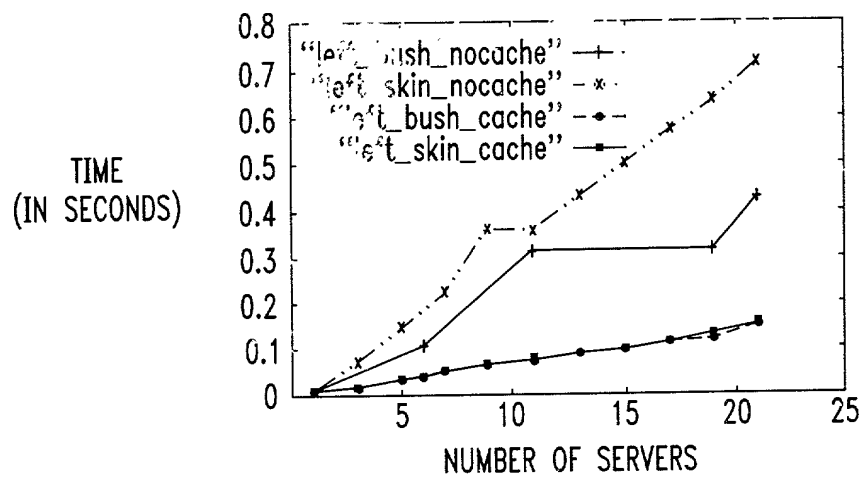
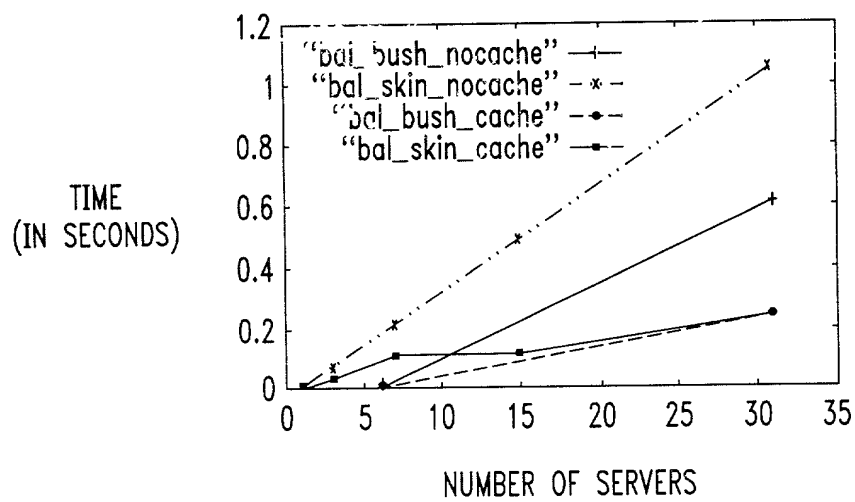
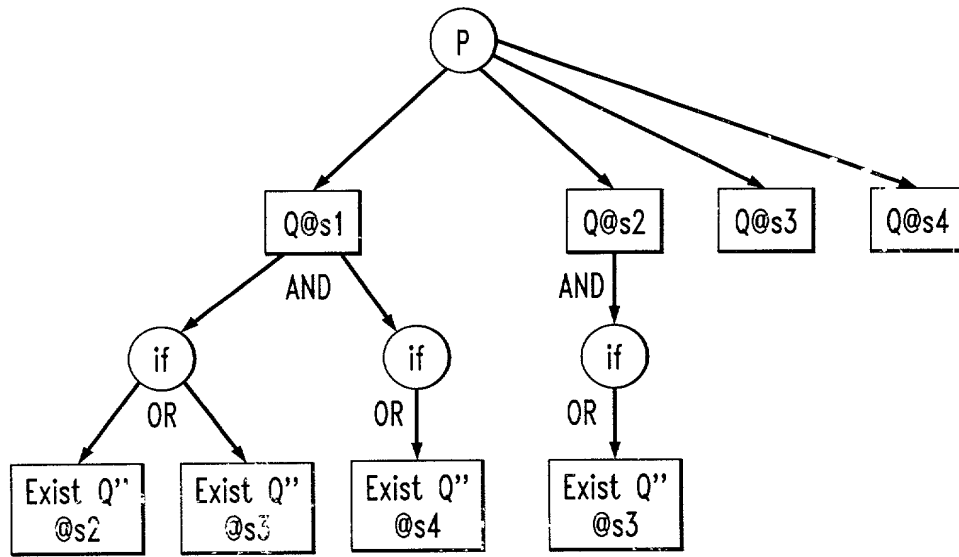


FIG. 2b



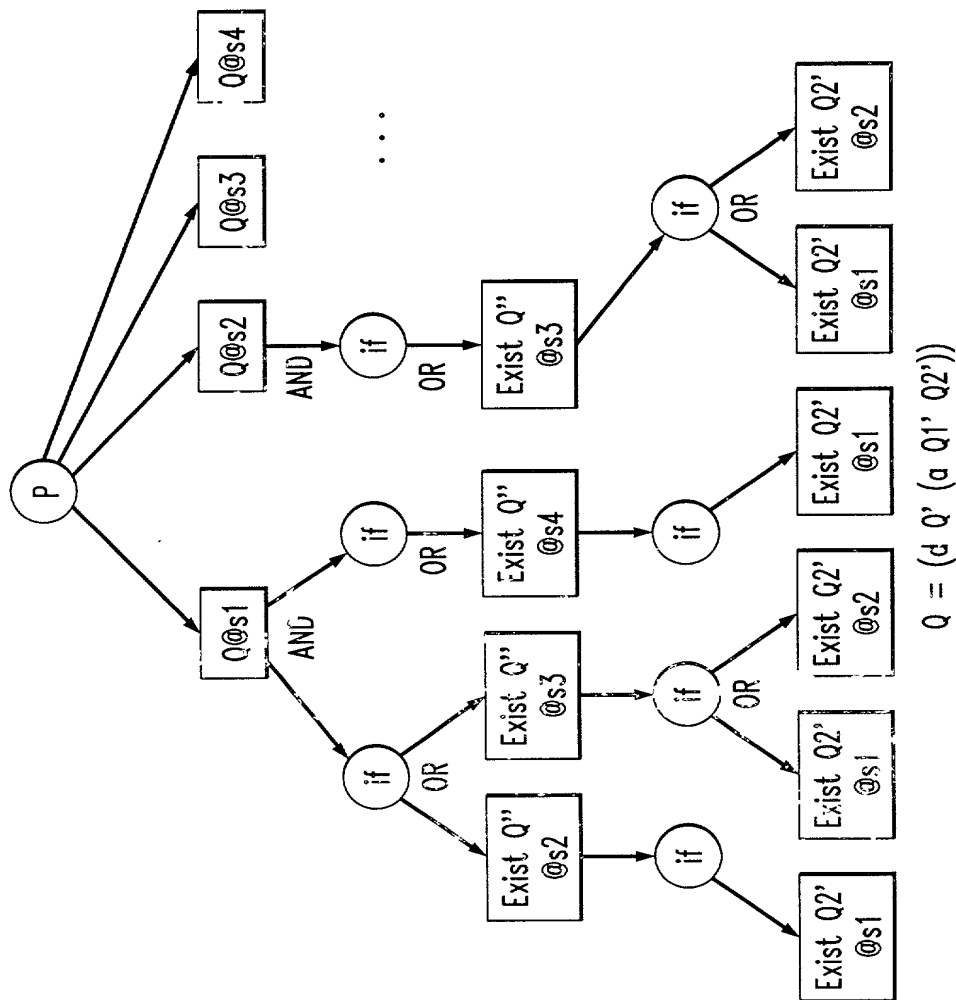
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FIG. 3



$$Q = (d \ Q' \ Q'')$$

FIG. 4



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FIG. 5

```

Algorithm Schedule(PT) {
  Answer := { }; Pending := { }; Enabled := { };
  for each n in leaves(PT) do computeQueryNode(n);
  while (Enabled ≠ { } OR Pending ≠ { })
    L := chooseForSchedule(Enabled); /* implements a particular scheduling policy */
    for each (Q,S) in L do
      Pending := Pending ∪ {(Q,S)}; LDAP_issueQuery(Q,S);
      LDAP_waitForEvent(e);
      case e.type of
        boolean answer for Q@S: Pending := Pending - {(Q,S)};
                                storeCache(Q,S,e.value);
                                for n in getCacheWaitinglist(Q,S) do {
                                    n.value := e.value;
                                    computeConditionalNode(n.parent); }
        directory entry for Q@S: Answer := Answer ∪ {e.value};
        End-of-Entries for Q@S: Pending := Pending - {(Q,S)};
  return Answer;
}

function computeQueryNode(n) {
  if all n's children are computed then
    Q := generateQueryExpression(n.Query); /* expands all if-macros */
    S := n.Server; v := getCache(Q,S);
    case v of
      INEXISTENT:      insertCache(Q,S, Pending);
                      Enabled := Enabled ∪ {(Q,S)};
                      addCacheWaitingList(Q,S,n);
      Pending:         addCacheWaitingList(Q,S,n);
      TRUE, FALSE:    n.value := v;
                      computeConditionalNode(n.parent)
  }
}

function computeConditionalNode(n) {
  if (exist p in n.children such that p.value = TRUE) then
    n.value := TRUE; computeQueryNode(n);
  else if (all n's children are computed) then
    n.value := FALSE; computeQueryNode(n.parent);
  }
}

```

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FIG. 6

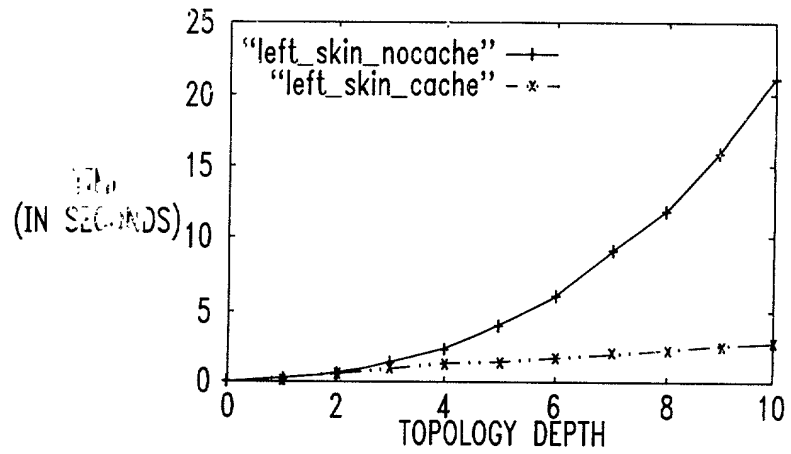


FIG. 7a

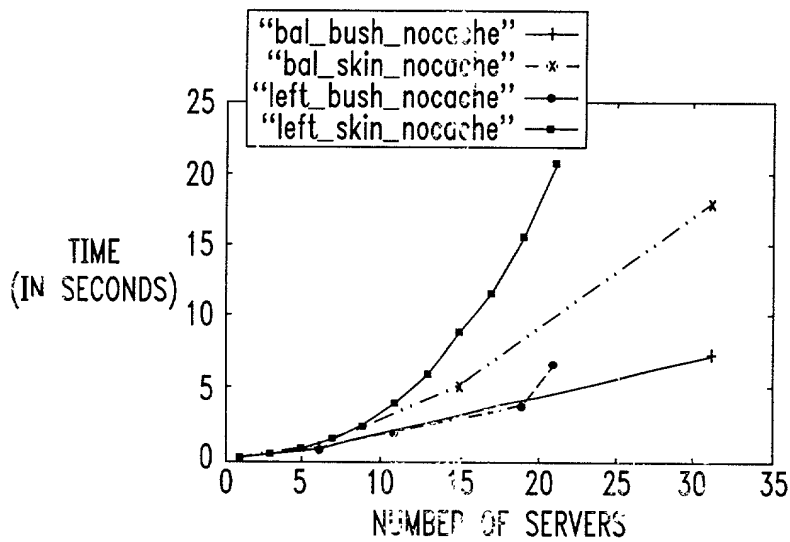


FIG. 7b

